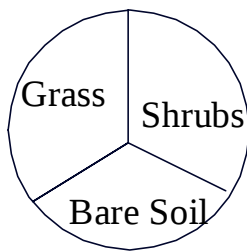




THE COVEY HEADQUARTERS

Volume 5 Issue 3 Fall 2006

This newsletter is aimed at cooperators and sportspeople in Missouri to provide information on restoring quail. This is a joint effort of the Missouri Department of Conservation, USDA-Natural Resources Conservation Service, University of Missouri Extension and Quail Unlimited. If you would like to be removed from this mailing list or have suggestions for future articles please contact jeff.powelson@mdc.mo.gov or 816-232-6555 x122 or write to the address shown.



The name of this newsletter is taken from an old concept.....that a quail covey operates from a headquarters (shrubby cover). If the rest of the covey's habitat needs are nearby, a covey should be present. We are encouraging landowners to manage their quail habitat according to this concept. Use shrubs as the cornerstone for your quail management efforts. Manage for a diverse grass, broadleaf weed and legume mixture and provide bare ground with row crops, food plots or light disking **right next to** the shrubby area.

REVIEW OF MISSOURI'S QUAIL HUNTING SEASON DATES

Tom Dailey, Resource Scientist, Columbia, MO

Ever wonder why the opening and closing dates of quail hunting seasons vary so much from state-to-state? In nearby states opening dates range from October 26 (Nebraska) to November 19 (western Kansas), and seasons close from December 19 (Indiana) to February 28 (Tennessee). In case you didn't notice, last year's regulations stated the season structure was in review. This action was stimulated by a citizen petition requesting hunting until early February. Here's a summary of the review that led to the decision to leave regulations unchanged:

- **Era of annual season review:** During the past 40 years, Missouri quail season has opened on November 1 and 10, and closed December 15 and 31, and January 15. North and south Missouri had different season dates in 1961 and 1985. From the 1950s to mid-1980s, MDC quail hunting regulations were set each year based on population indices. There was no evidence, however, that this approach was effective in maintaining an abundance of quail. On the contrary, this diverted the public's attention from the primary cause of low quail numbers, dwindling habitat.
- **Focus on habitat:** In 1986, MDC Wildlife Research Biologist Rich Cannon recommended the hunting season that we currently use, November 1 to January 15. In 1987 this season structure was placed in the Missouri Conservation Commission Wildlife Code. Biologists reasoned that the public's focus should be shifted away from regulations as a way to restore quail, and toward habitat restoration and management.
- **Balancing biology and recreation in 1986:** The January 15 closing date was largely based on research in Illinois that showed hunting losses in January added to natural mortality and risked a decline in breeder numbers. Cannon's summary of the regulation setting process was published in 1986 in an MDC publication, *Missouri Quail: At the Crossroads of the Future* (<http://mdc.mo.gov/landown/wild/quail/>), where in the section titled *Seeking a Balance*, Cannon referred to the January 15 closure as a compromise between recreational demand for a longer season, and the quails' sensitivity to over-harvest as identified in the Illinois study.
- **Recent research:** Recent research in Kansas, Texas and North Carolina reiterated the finding from Illinois that quail are vulnerable to over-harvest in January, February and March. The timing of harvest is at the crux of the quails' sensitivity. Kansas researchers stated it this way: "Managers should recognize that harvest can significantly lower spring northern bobwhite breeding densities." and that "one way to reduce harvest effects is to assure that harvest timing occurs in early winter and hunting season length is minimized."

- **Timing of harvest is critical:** The effect of timing of harvest is based partly on the phenomena that high-producing small game populations face a habitat 'bottle-neck' in winter as cover and food are reduced, resulting in increased natural mortality (predation, cold, disease, etc.), and subsequent rapid decline in abundance. The result of this is that harvest can have less effect on breeder abundance if it occurs prior to major periods of natural mortality. *The practical result is that 1 quail harvested in early November does not necessarily result in 1 less breeder the next spring.* On the other hand, as natural mortality increases during winter, eventually 1 quail harvested *does* result in 1 less breeder.
- **Winter stress:** In addition to the above consequences, hunting in January is potentially more damaging because quail are more vulnerable in winter's diminished cover, and birds not killed, but harassed, could suffer energy losses, and potentially higher mortality.
- **Missouri's quail vulnerable in January:** MDC's study of quail on farmland in northeast Missouri in the 1990s found that natural mortality spiked in January—predators and winter weather took a heavy toll with the percent of quail killed jumping from 17% in December to 29% in January. This pattern fit Illinois and Kansas observations of increased vulnerability in January.
- **Uncertainty:** There is uncertainty about the exact appropriate closing date. In addition to the lack of such specificity in above research studies (all researchers called for experimental testing), Missouri's own study of quail harvest in premiere public land habitat in 1996 found that most of the quail 'saved' from heavy hunting were killed anyway by natural causes, mostly predation. Management of quail hunting thus remains a challenge to biologists and policy makers.
- **A new closing date?** No, almost 18 years later we arrived at the same conclusion drawn in 1986: the January 15 closing date is a compromise between biology and sport. Further, in 2005 the state embarked on a massive quail restoration program because of the dwindling quail population—to liberalize hunting now would send a mixed message.
- **A new opening date?** No, with a biological constraint on the closure, we are forced to look to fall for increased recreational opportunity. Biologically, this is easy because at this time harvest has little, if any, effect on breeder abundance. Many of the quail killed by hunters would have died anyway because of predation, malnutrition, etc. Biologists have known since the 1940s that good management demands that harvest by the gun come as close to the reproductive season as reasonably possible. With most of Missouri's quail production finished during August-September, this is exactly what the November 1 opener does.



So what about all those different state regulations? Change comes slow, and traditions vary widely, but several states are considering moving closing dates back to reflect the quails' sensitivity to harvest in January. For the 2006-07 season, Kansas' quail closure is moving back 10 days from the traditional January 31 ending.

The above summary covers only a portion of the review—for the complete review go to <http://mdc.mo.gov/landown/wild/quail/>.

Did You Know???

Fall is a great time to prepare for edge feathering or improve existing shrubby cover on your farm. The majority of existing plum and dogwood thickets in Missouri are choked with fescue and brome – virtually useless to quail. Spray this fescue and brome once your shrub thickets go dormant. By killing the invasive grasses, you will provide bare ground and encourage weedy growth within your new covey headquarters. If you plan to edge feather this winter, fall is a great time to spray the grass where your trees will be dropped. Again by spraying the grass you will provide open ground for your birds to navigate through your edge feathering. If you are edge feathering adjacent to CRP fields make sure your trees don't fall out into your CRP fields. If they do, you must place them adjacent to the CRP field unless you are edge feathering along a CP33 field border. CP33 allows edge feathered trees in the buffer area.

Fall Covey Headquarters Calendar

September

Prepare firelines for fall and winter burns
Burn native warm-season grass in fall to increase plant diversity
Light disk your CRP acres now through Dec. 31
Broadcast alfalfa and wheat into tilled firebreaks

October

Conduct fall covey counts 20-30 minutes before sunrise
Prepare for edge feathering by spraying brome/fescue where trees will drop
Spray fescue and brome in fencelines, woody draws, and under shrubs after leaf drop
Spray native grass plantings for invading brome and fescue after a killing frost
Spray CRP cool-season grasses now through Dec. 1

November

Basal spray undesirable trees according to herbicide label now through March
Order your covey headquarter shrubs from the MDC nursery through May. Blackberry, shrub dogwoods, wild plum, and false indigo bush are best for quail

Quail Need Shrubs No Matter Where You Go

Bill White, Private Land Programs Supervisor, Jefferson City, MO

Biologists from the Department, Quail Unlimited, Pheasants Forever and the University of Missouri recently attended a quail research conference in Athens, Georgia. The conference featured presentations from researchers on the newest knowledge about quail biology and habitat management. The Missouri group attending this conference also participated in a tour of some of the most successful quail plantations in Florida and Georgia to gain first-hand knowledge about the management and research conducted there.

This tour and several others I have attended in various parts of quail country have helped me conclude that it does not appear to matter where you are at - Oklahoma and Texas prairies, shortleaf pine forest in the Ozarks or longleaf pine forest in the deep south – quail need low growing shrubby cover less than 12 feet high. On the quail plantations we toured the shrubby cover comes from hardwood tree sprouts, which are continually set back by prescribed burning. In the prairies of Oklahoma and Texas, the best quail populations are in areas where shrubs are in scattered thickets or motts about a softball throw apart.

In Missouri, we have referred to these thickets as covey headquarters and our research suggests that shrubs are used daily for loafing, for shade on sunny afternoons and for protection from predators and extreme weather. One Missouri study found that during the winter quail are found an average of 70 feet from shrubby cover. Quail managers in Florida also feel that shrubs and hardwood tree sprouts provide a valuable source of insects for young quail broods.

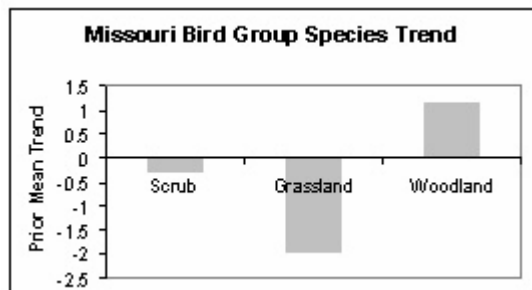
Another basic quail need that we find in the best quail habitat in the U.S. is bare ground between plants. The lack of dead plant litter promotes the growth of weeds and other seed producing plants. Most importantly, it allows those tiny quail chicks to move about while they hunt for insects. Bare ground will provide a source of grit for the birds and a place to dust helping to rid them of parasites such as chiggers, mites, and lice. On a recent tour of some quail demonstrations at the University of Missouri Bradford Research Farm near Columbia, we observed quail and songbird dusting sites spaced about 4 feet apart within our native wildflower food plots.....where plenty of bare ground is present between the plants.

Quail researchers from the south are **NOT CONCERNED WITH PLANTING GRASSES** or providing nesting cover. What they are concerned about is providing bare ground and plant diversity. Little grass planting ever takes place, instead they concentrate on disking and burning some each year. They aim to provide food and cover for chicks and eventually the coveys that form in the fall. **IF YOU DISK, BURN, EDGE FEATHER or PLANT SHRUBS – ALL IN CLOSE PROXIMITY** you will have done what the most successful quail managers in the country have done. **IF YOU BUILD IT, THEY WILL COME.**

Early Edge Feathering Results are Promising for Bobwhites!

Travis Dinsdale, Area Biologist, St. Joseph, MO

Quail in Missouri and nationwide continue to decline at an alarming rate. Many grassland birds that use the same habitat as the bobwhite are facing a similar decline. I often hear “my farm looks the same as it did 30 years ago!” Well, do you look the same as you did 30 years ago? I doubt it, people age and grow each day as do grass, shrubs, and trees. Over time as this growth goes unchecked, the less attractive the landscape is for quail.



Missouri's landscape is changing as noted by the shift in bird species. Many bird species that favor scrub and grassland habitats are declining while woodland bird species are increasing as shown in the graph to the left. Why are there so many deer and turkey? They prefer wooded habitats which are increasing in Missouri hence the deer and turkey are responding to a change in landscape.

In an effort to increase the shrubby cover used by quail and other grassland birds, the Missouri Department of Conservation

is currently researching the effects of edge feathering for quail and other grassland birds. The process of edge feathering involves cutting down mature trees to simulate shrubby cover that quail and many other grassland birds depend on. This project is taking place on private land in northern Missouri. Three adjacent landowners agreed to have there overgrown fencelines, woodland edges, and woody draws edge feathered. Landowner funding source to get the work done was made possible by USDA's Wildlife Habitat Incentives Program. The landowners hired a contractor to complete approximately 30 acres of edge feathering. The contractor was instructed to cut all trees within 30 feet of the field edge and treat all stumps with herbicide to prevent re-sprout. The fescue and brome was sprayed where the trees were dropped using a boomless sprayer mounted on an ATV. We have a similar landscape near our treatment site that serves as the control site. We are using point counts to estimate fall covey numbers and breeding bird abundance for three species of game birds and six species of songbirds. Our breeding bird counts are conducted during the period May 24 – June 30. Our covey counts are conducted in mid-October.

We began our monitoring in 2003 before any work began. Edge feathering across the entire study area was completed in April of 2006. Our 2006 breeding bird counts were the first post-treatment data collected. Our fall 2006 covey counts will be our first counts with all edge feathering complete. During covey counts on our treatment site in 2005, we saw an increase of 4 coveys where the edge feathering was implemented and no change in number of coveys where edge feathering had not been completed yet. This is similar to our breeding bird counts in 2005 where we saw increases in breeding bobwhites where edge feathering was implemented and a decrease in whistling bobwhites on the treatment site where edge feathering had not been completed yet. Through 3 years of breeding bird surveys we have seen a slight increase in number of whistling bobwhites on our edge feathered site. On our control site where no edge feathering takes place, whistling bobwhites have declined by nearly 50%.

Based on preliminary data, edge feathering appears to be a successful approach for restoring appropriate shrubby cover for quail and grassland songbirds in Missouri. We will continue breeding bird surveys and covey counts for the next 3-5 years. With all edge feathering now complete, we expect an increase in fall coveys on our treatment site. Edge feathering should increase winter survival and provide more usable space by putting quality habitat back on the ground for bobwhites to expand their range on our study area. If our study continues to show edge feathering as a positive early successional management practice, thousands of acres of bobwhite habitat can be restored throughout Missouri. Missouri's current landscape lends itself to edge feathering on nearly every public area and private farm in the state. If you have any woody draws, fencelines, or woodland edges dominated by tall trees give edge feathering a try. Use a chainsaw or clipper (no bulldozers) to cut the trees and leave them where they fall - **do not pile the trees into a brush pile**. If quail are in the area, you will see instant quail use of your edge feathering. In my opinion, edge feathering is the best management practice you can do for quail.

Did You Know???

Are you not enrolling in a cropland buffer program because you are worried about crop pests associated with buffers? A recent study in Missouri found that corn stalk infestation by European corn borer of native warm-season grass buffered corn was always 2 to 3 times less than that of cornfields surrounded by straight fescue or cool-season mix buffers. Additionally, the buffers in this study had no effect on the abundance of bean leaf beetle in soybean, alleviating farmers concerns about this pest.

Build it and they will come...

I was late with my food plots and disking this year and I didn't get done until the weekend after July 4th. I wanted to share another amazing result of recommended light disking. I had completed disking a food plot and had a short distance to finish light disking I do around the outside edge of my crp fields. I completed that task and went to get the ATV and spread some sorgham seed over the disked strips. I couldn't have been gone 30 minutes but when I came back around on the last field I had disked around, I ran up on two male bobwhites having a grand time dusting themselves. They were so focused on their dusting, I literally had to stop the ATV to wait for them to move. And when they did, they came right back into the dirt after I passed. Not far from them and maybe 15 minutes later, I ran across a female quail dusting to her hearts content. Another 5 minutes I found a hen pheasant and her early hatch enjoying the dirt of a food plot.

It simply amazes me how these birds are drawn to the bare dirt. I know for a fact it had been less than 2 hours since this ground was exposed that the birds were taking advantage of the benefits. Maybe the birds are drawn to seeds knocked loose from the commotion but it is clear they are using the dirt to dust themselves. I tell people if I was limited to one management technique, I would disk for the birds. I continue to be amazed at the immediate impact it has on the quail & pheasants. **Don Willis, Andrew County**

I'm seeing and hearing more quail than I have heard in the last 10 years. I've had similar reports from a number of farmers and CP33 participants I work with. When I go out to verify edge feathering work, sometimes within days of completion, I see birds using the cover. I'm also hearing birds whistle in places I haven't the past 2 years. I've flushed 5 quail pairs on a portion of the 160 Ac. we converted to CRP in 2004. Also, saw several pheasants hanging out in the wildflower patches within the same CRP field. **John Wheeler, Andrew County Buffer Coordinator**

CP33 Acres in Missouri Tops 18,000

Have you been waiting to enroll in the CP33 field border program? Time is running out as Missouri has less than 5,000 acres remaining to enroll into the program. Once crops come out this fall the remaining acres will go fast. Nearly every farm has a low yield area that fails to produce a crop. Quit wasting your time and money and buffer those low yield areas with the CP33 program. Your overall inputs will go down and yields will improve because you will only farm your best ground in each field. CP33 offers a \$100/acre signup bonus, annual CRP rental payment, and up to 90% cost-share to install the buffers. Visit your local FSA office and signup before the opportunity passes you by!

Mark Your Calendars

Quail Habitat Improvement Workshop

October 7 - Covey Headquarters Quail Management Workshop Series 5, Union Star, MO. Learn how to estimate quail coveys (early am quail survey) followed by breakfast. Then attend a wildlife management tour looking at burning, food plots, herbicide spraying, warm-season grass establishment, edge feathering and shrub plantings. Please register by October 4 by calling 816-271-3100, or 816-364-3662 ext 122 or email Jeff Powelson at jeff.powelson@mdc.mo.gov

Prescribed Burn Workshop

October 21 at 9 AM at the Hal England Center in Princeton, MO. Hands-on demo burn planned after lunch at Lake Paho CA. Lunch and refreshments provided for all participants. Registration required by October 18. Contact: Scott Roy @ 660-359-5685 ext 114

Banquets

October 7 - Northwest Missouri Pheasants Forever 5th Annual Banquet at the Eagles Lodge 2 miles south of Maryville, MO on Hwy 71. Silent and Live Auction Previews 5:30-7:00PM
Dinner at 7:00PM Live Auction at 8:00PM

October 7 - Mark Twain Quail Unlimited Banquet, Madison, MO for more info contact 660-327-4117 ext 3

October 14 - St Louis Chapter Quail Forever Banquet/Fund Raiser, Grants Farm
Contact Steve Spezia for details 636-300-1953, ext 308

January 20, 2007 - St Louis Chapter Quail Unlimited Fund Raiser, Black Hawk Hunting Club
Contact Steve Spezia for details 636-300-1953, ext 308

CRP Mid-Contract Management

Below is a CRP mid-contract management table. CRP grass can be managed using fire, chemical, or a disk. CRP management became a requirement with the 26th CRP signup. Mid-contract management is necessary because CRP fields begin to lose their wildlife value after year 4. Missouri's climate is perfect for growing grass and any grass stand left unmanaged for several years gets too thick for small game. Even a native warm-season grass stand gets too thick for small game and must be managed. The goal of CRP mid-contract management is to open up the grass stand, encourage wildflowers and legumes, and provide bare ground for wildlife. The management dates are set at a time when the grass will be suppressed, which is your goal. By completing your mid-contract management practices, you are extending the wildlife value of your CRP acres through the life of the contract. Visit your local USDA Service Center if you have questions about CRP mid-contract management.

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	
Burn Cool Season													3/15 – 4/30
Burn Warm Season													7/16 – 3/15
Disk													7/16 – 12/31
Spray Cool Season													3/15 – 4/30 or 10/1 – 12/1
Spray Warm Season													7/16 – 9/15

“COVEY CARD” Helps Track Bobwhite Quail Numbers

Landowners in Southwest Missouri have been asked to help the Missouri Department of Conservation (MDC) track bobwhite quail numbers during the fall and early winter. Cooperating landowners received five “Covey Cards” for use during the months from August to December. They send in one postage-paid Covey Card at the end of each month. The Covey Card records the number of different bobwhite quail coveys seen by the landowner during that month, the number of birds in each covey, and the type of habitat the birds were using. In addition, the county and nearest town is also recorded. According to Bob Schroepel, Southwest Regional Supervisor for the Private Land Services Division, the primary purpose of the Covey Card is to help remind landowners that management for bobwhite quail is an ongoing and continual process. Local MDC biologists also plan to use the information provided on the Covey Card to help track long term bobwhite quail numbers in the 17-county Southwest Region. No matter where you're from, you should always pay attention to the habitats your birds are using. We all have an area where we can always find a covey of birds. Why? They are always there because the habitat is ideal for them. Try to copy these ideal conditions throughout your farm.

Dual Missouri Quail Unlimited Chapters Receive National Habitat Awards

Jeff Powelson, Private Land Conservationist, St. Joseph, MO

The old saying "There is no I in team" is definitely true for two Missouri Quail Unlimited Chapters. This past July in Kansas City, Missouri at the Quail Unlimited National Convention chapters were recognized for outstanding habitat accomplishments. This year's top award (1st Place National Habitat Award) was presented to the West Central Missouri Chapter from Harrisonville, MO. This is the fourth year in a row for this chapter to receive this award. This has never been done in the history of the Quail Unlimited organization. Missouri quail enthusiasts should be proud to have not only one conservation organization, but two, to receive a national award. The Heartland Chapter of St. Joseph, MO also received their first ever National Habitat Award with a 2nd place finish. These awards are a reflection of the dedicated volunteers and many hours of work with landowners and other partnerships they share to accomplish **HABITAT** on the ground. These chapters and hundreds more will play a vital role in reversing the decline in bobwhite quail populations. Keep up the good work and thanks for your interest in quail conservation.

Cool-Season Grass Control

Steve Fisher, Private Land Conservationist, Brookfield, MO

Biologists field many questions about the best way to suppress or eliminate cool-season grasses in CRP fields, wetlands, food plots, and other idle wildlife areas. For many government cost/share programs, eliminating or reducing a stand of cool-season grasses is required as part of a conservation plan. The following is basic biological information useful in understanding why control measures are more effective at certain times of the year.

The ability to suppress any plant is largely dependent upon the growth stage and life cycle at a particular time of year. Common cool-season grasses (CSGs) include Tall Fescue, Smooth Brome, Reed Canarygrass, Timothy, and Orchardgrass. As the name implies, CSGs grow primarily during the cool portions of our 4 seasons - spring and fall. Every year local temperature patterns can sway the dates, but for north central Missouri, major vegetative growth generally occurs between late February and May, and then again from late August through November. If we have a long cold spring, the early growth period is pushed back...and for an early, warm spring it will be earlier. If our late summers are cool and wet, the fall growth period starts earlier...if it is hot and dry, it will begin later. There are also small differences in the growth and dormancy cycles of each of the species listed above.

When daylight lengthens and spring temperatures warm, CSGs begin to grow and use up energy stored in the roots to make new leaves. Much of the root reserves can be depleted by spring to stay alive during dormancy (even if there is no above ground green growth). These leaves emerging from the crown are the first to capture sunlight and make energy - needed to produce even more foliage that will help rebuild roots and eventually produce seed after a long winter. It is important for the first green growth to quickly become established and become the "power factory" for the plant or it can become weakened or die. Ample spring rains and increasing sunlight allow the plant to become full and lush...ready to send up a seed head before the hot, dry summer. As the seed matures and summer arrives, CSGs go through a dormancy induced by lack of water and high temperatures. In severe conditions, CSGs can actually turn brown and sit idle all summer long. During summer dormancy root reserves are relatively low - energy will be used to sustain life and then send up new foliage when moisture and cooler weather returns. When fall rains begin around late August or September, CSGs once again deplete their stored energy to send out new, lush growth. This time however, most of the energy produced is sent underground to build large, strong root reserves which are needed to sustain it through the winter. If enough root reserves are left by the following spring, the process starts over again.

There are two distinct time periods in the growth cycle of CSGs when plants are at their weakest, which allow land managers to suppress or control them with greater effectiveness. **The very best time to control cool-season grasses is after the summer slump, as plants reach 6-10" of new growth in the fall.** Ideally, this should coincide within about 3-5 weeks before killing frost. Herbicide applied at this time is translocated in greater amounts to the roots where it can further weaken and eventually kill plants as they are trying to rebuild energy reserves for winter. If cold temperatures return at typical timing, partially weakened plants never have time to recover, and many succumb to winter-kill.

The second best time to control CSGs is in the spring, when plants attain 6-10" of new growth. For the same reason, herbicide applied to new vegetation may destroy winter-weakened plants or weaken them further. However, partially weakened plants have warmer weather and spring moisture to aid in their recovery (albeit long and slow). For the most effective, complete control method managers should plan to apply herbicide at the proper timing in the fall, and then again in spring on any surviving plants.

A note of caution: as a biologist, I can't tell you an exact calendar date to apply herbicide which will be effective every year. As mentioned above, our seasonal temperature changes can fluctuate up to several weeks, and so it is imperative that herbicides be applied at the proper growth stage of the plant (6-10" new growth), not based solely on calendar dates. For north central Missouri, the range of dates for highest effectiveness is generally between September 15-October 15 and March 15-April 15. For those who are interested in creating wildlife habitat these weak periods can be used effectively to improve CSGs as wildlife cover. Most stands of CSGs need to be thinned every 2-3 years to increase bare ground and stimulate forb growth for food and cover. This is usually done by prescribed burning, disking, or spraying. Better results can be attained if the treatment is applied during either of the weak stages as outlined above. Restrictions may apply to areas enrolled in federal, state, or local cost/share programs. Contact your local USDA Service Center for more information.



The Covey Headquarters Newsletter
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RETURN SERVICE REQUESTED